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Physical Activity Levels of Junior High School Adolescents During The COVID-19 Pandemic

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Abstract

The phenomenon of the COVID-19 pandemic has just ended, but one can still remember that the COVID-19 pandemic was a period that had an impact on people's lives. Teenagers are also affected by this pandemic. The social restrictions previously set by the government forced the physical activity of youth to decrease, especially learning activities at school which were stopped and replaced with online learning. This causes a decrease in physical activity in adolescents. The researcher used a descriptive observational method with a cross sectional approach and used cluster random sampling as a sample. The sample used in this research was 675 students. The research used the Physical Activity Questionnaire for Adolescents (PAQ-A) questionnaire. The results of data collection were processed using one-sample Kolmogorov-Smirnov. The results of this study found that the number of female respondents in this study was more than the number of male respondents with a total of 386 female respondents (57.2%). The highest number of respondents was at the age of 15 years with a total of 216 students (32.0%), and the highest student class category was in class IX with a total of 323 students (47.9%). The extracurricular most frequently participated in by respondents in this study was futsal with a total of 102 students (15.1%). The results showed that most of the students' physical activity level was at a low level, with a total of 419 students (62.1%). The conclusion of this research is that the majority of teenagers' physical activity levels are still low.

Keywords: Physical Activity, Adolescents, COVID-19, Pandemic

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1. BACKGROUND

The COVID-19 pandemic phenomenon has just ended, but it can still be remembered that the COVID-19 pandemic was a period that had an impact on the lives of the entire community. Since COVID-19 was declared a pandemic, people's activities have become more limited, including teenagers (Suryoadji and Nugraha, 2021). Likewise with teenagers who are also affected by this pandemic. The existence of social restrictions previously

set by the government forced teenagers' physical activity to be reduced, especially learning activities at school which were stopped and replaced with online learning. So far, teenagers' physical activity is closely related to activities at school, so that when learning is carried out online there are changes in their physical activity (Darni et al., 2021). During the online learning period, teenagers more often do activities in a sitting position, resulting in a decrease in physical activity in teenagers.

The term "Teenager" comes from the Latin adolescene which means to grow (to grow) or to grow materially (to grow up) (Saputro, 2018). According to Hurlock (1980, in (Fhadila, 2017)), the term youth has the meaning of "growing up" or becoming an adult, the term youth has a broader meaning in which individuals experience physical, emotional, social, and mental maturity. Adolescence is described as a phase when individuals are no longer children, but also immature (WHO, 2018). In this phase, individuals experience changes physically and psychologically. WHO defines youth as individuals who are in the age group of 10-19 years.

According to research conducted by Darni et al, showed that 90.5% of female adolescents and 63.6% of male adolescents carried out more activities at home, 54% of female adolescents and 45.5% of male adolescents carried out more activities in a position sitting or lying down. The percentage of standing or walking activity was 38.1% for female adolescents and 63.6% for male adolescents. The percentage of doing sports for teenage boys is 90.9% and for young girls is 31.7%. According to research conducted by Muharani (2021) in Bogor, the results obtained were that during online learning during the COVID-19 pandemic, the percentage of adolescents doing low physical activity was 46%, moderate physical activity was 52%, and high physical activity was 2%.

Based on Erikson's psychosocial theory, adolescents are in the identity vs identity confusion stage, namely the stage where adolescents try to form self-identities (Orenstein and Lewis, 2021). The formation of self-identity in adolescents is done by looking for friends and the environment that has an impact on them, and teenagers have attention to the state of their bodies. In adolescence, generally teenagers will be closer to friends and spend more time outside the home to play with friends, explore the environment, and start dating the opposite sex that they meet directly. However, due to the pandemic, teenagers spend more time at home exploring the virtual world, and sometimes teenagers even absorb everything they see in the virtual world and think that this is

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true without filtering it first. Teenagers who are more focused on exploring the virtual world and playing social media also often act apathetic and indifferent to their surroundings.

In previous research conducted by Darni et al., it can be concluded that adolescents experience a decrease in physical activity when learning is carried out online. However, now the government has stated that schools and teaching and learning activities can be carried out face to face again, even though the teaching and learning time is not the same as before the pandemic. Based on the Circular Letter (SE) issued by the Ministry of Education, Research and Technology (Kemendikbudristek) Number 2 of 2022 concerning Discretionary Implementation of the Joint Decree of the Four Ministers concerning Guidelines for Organizing Learning During the COVID-19 Pandemic, states that Face-to-Face Learning (PTM) is Limited in areas with Level 2 Community Activity Restrictions (PPKM) can be carried out by taking into account the number of students participating in PTM as much as 50 percent of the classroom capacity. Meanwhile, the implementation of Limited PTM in areas with level 1, level 3, and level 4 PPKM still follows the provisions in the Joint Decree of the 4 Ministers (Circular of the Minister during the COVID-19 Pandemic, 2022). As a follow-up to the SE, currently many schools in Indonesia have implemented teaching and learning activities again by face-to-face learning (PTM).

Based on the background above which explains the occurrence of the COVID-19 phenomenon, which causes changes in people's physical activity, especially in school-age adolescents, researchers are interested in examining the description of the level of physical activity of junior high school adolescents during the COVID-19 pandemic in Patrang District.

2. METHODS

The research design used in this research is quantitative, using descriptive observational methods with a cross sectional approach. The research location was carried out at 10 junior high schools in Patrang District, Jember Regency. The schools where the research was conducted were SMP 13, SMP 7, SMP 2, SMP 10, SMP 4, SMP Baitur Rohmah, SMP Mitra Patrang, SMP Muhammadiyah, SMP Al Muttaqin, and SMP Plus Al Qodiri. Data collection was carried out from December 2022 to January 2023.

The population in this study were junior high school (SMP) students in Patrang District, Jember Regency. The

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population was taken from a total of 10 junior high schools in Patrang District, consisting of 5 state junior high schools and 5 private junior high schools. All students at the school became the research population, with a total of 3,897 students. Sampling was calculated using the Slovin formula with the total sample required being 675 respondents.

The sampling technique for this research uses cluster random sampling. The number of samples required is then divided using the cluster random sampling formula to determine the number of samples needed in each school. The criteria used in sampling were students aged 10-18 years or in their teens, being active students at the research site, and not having a side job other than being a junior high school student.

The data sources used are primary data and secondary data. Primary data was obtained from the questionnaire sheet given to respondents. The questionnaire used is The Physical Activity Questionnaire for Adolescents (PAQ-A) created by Kent C. Kowalski, Peter R. E. Croker, and Rachel M. Donen in 2004, which was modified by Pita Hudaya (2019) to adapt to general conditions in Indonesia. Secondary data in this research was obtained from data from the Ministry of Education, Culture, Research and Technology, as well as the junior high school administration in Patrang District which was the research site.

The data was analyzed descriptively. Researchers used descriptive analysis to analyze gender, age, class and extracurricular activities. The data in this study is in ordinal form and only has one variable, namely to determine the level of physical activity of junior high school teenagers in Patrang District, so the researchers used the one sample Kolmogorov-Smirnov and Chi Square tests.

3. RESULTS

Characteristics of Respondents

The characteristics of the respondents in this study consisted of gender, age, class and extracurricular activities attended. The following is a table of characteristics of research respondents:

Table 1. Distribution of Characteristics of Middle School Adolescent Respondents in Patrang District during the Covid-19 Pandemic (n=675). *continue to page 230

Characteristic of respondents	Frequency	Percentage (%)
Gender		
Male	289	42,8
Female	386	57,2

Characteristic of respondents	Frequency	Percentage (%)
Age		
12	46	6,8
13	170	25,2
14	205	30,4
15	216	32,0
16	38	5,6
Class		
7th	181	26,8
8th	171	25,3
9th	323	47,9
Extracurricular		
Badminton	2	0,3
English	3	0,4
Basketball	66	9,8
Batik	2	0,3
Bridge	2	0,3
Broadcasting	10	1,5
Drum band	30	4,4
Futsal	102	15,1
Hadroh	27	4,0
IPA	8	1,2
Journalism	21	3,1
Scientific work	3	0,4
Mathematics	9	1,3
Multimedia	10	1,5
Music	26	3,9
Choir	16	2,4
Paskibra	37	5,5
Martial Arts	21	3,1
PIK-R	1	0.1
PMR	57	8,4
Scout	52	7,7
Art	2	0,3
Taekwondo	1	0,1
Tahfidz	7	1,0
Dance	68	10,1
Volleyball	36	5,3
Do not follow	56	8,3

Based on Table 1, the results show that the number of respondents to the study was 675, with 289 male students (42.8%) and 386 female students (57.2%). The largest age category is students aged 15 years with a total of 216 students (32.0%). The largest student class category is in class IX with a total of 323 students (47.9%). The students' extracurricular activities are diverse and most of them

participate in extracurricular futsal with a total of 102 students (15.1%).

Adolescent Physical Activity Levels

Based on the research conducted, data obtained on the level of physical activity of junior high school students in Patrang were divided into five classifications of levels of physical activity. There are nine indicators assessed in the questionnaire whose final results are calculated to determine the classification of students' physical activity levels.

Exercise frequency

At this point, there are 16 types of sports and 1 other sports question that students can fill in themselves if the type of sport they are doing is not listed in the questionnaire questions asked. Questionnaires were filled out based on the frequency of doing the sport, with a frequency of never, 1-2 times, 3-4 times, 5-6 times, and 7 times/more. The following are the results of student exercise frequency.

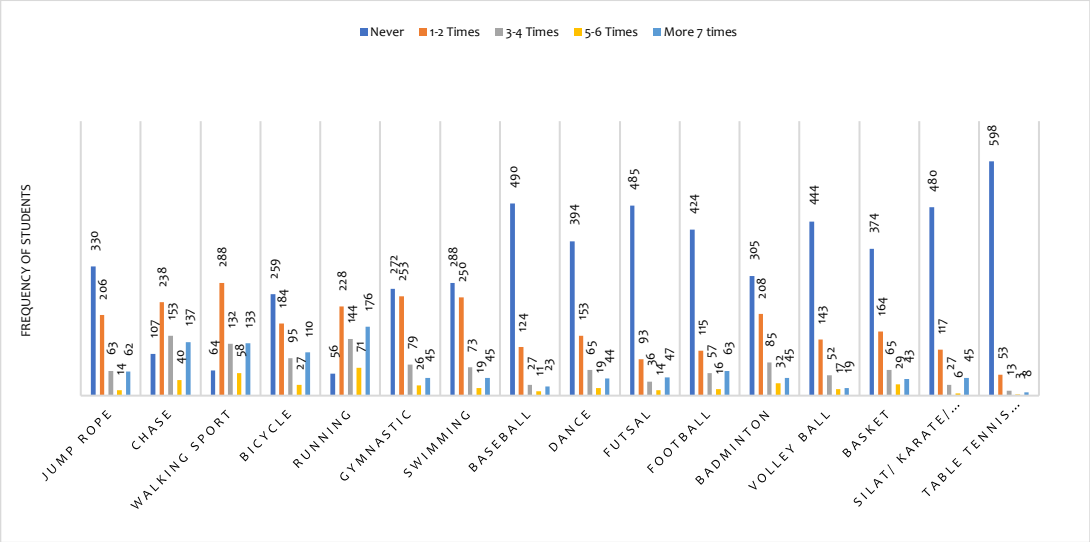

Figure 1. Distribution of sports frequency among junior high school adolescents in Patrang District during the COVID-19 Pandemic (n=675)

Participation when learning Health and Sports Sciences (PJOK) at school

At this point, the questionnaire contains questions related to activeness in playing, running, jumping and throwing activities during sports lessons at school. The answer choices were divided into never, seldom, sometimes, often, and always. The following are the results of being active when learning PJOK at school.

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Table 2. Distribution of activity participation when learning pjok at school among junior high school adolescents in Patrang District during the COVID-19 Pandemic (n=675)

Classification of Activity Participation	Frequency	Percentage (%)
Never	9	1,3
Seldom	102	15,1
Sometimes	221	32,7
Often	240	35,6
Always	103	15,3

Lunch Break Habits

At this point, it contains questions about what students do during lunch time (break) other than eating. Answer choices were divided into sitting (chatting, reading, doing assignments), standing or walking around, running or playing a little, often running or playing, and playing and running all the time. Here are the results of habits during lunch break.

Table 3. Distribution of lunch break habits among junior high school adolescents in Patrang District during the COVID-19 Pandemic (n=675)

Classification of Lunch Break Habits	Frequency	Percentage (%)
Sit	415	61,5
Stand or walk around	116	17,2
Little running or playing	70	10,4
Often run or play	48	7,1
Playing and running all the time	26	3,9

Sports frequency after school in a week

At this point, it contains questions about how many days a week students do sports, dance, or play games that make students move actively. The answer choices are divided into never, 1 time a week, 2 or 3 times a week, 4 or 5 times a week, 6 or 7 times a week. The following is the result of sports frequency after school.

Table 4. Frequency distribution of sports after school in a week among junior high school adolescents in Patrang District during the COVID-19 Pandemic (n=675)

Sports frequency	Frequency	Percentage (%)
Never	128	19,0
1 time a week	204	30,2
2 or 3 times a week	253	37,5
4 or 5 times a week	32	4,7
6 or 7 times a week	58	8,6

Exercise frequency in the previous week

At this point, it contains questions about the frequency of students doing sports, dancing, or playing games that made students move actively last week. Answer choices were divided into never, 1 time, 2-3 times, 4-5 times, 6 times or more. The following are the results of exercise frequency last week.

Table 5. Sports frequency distribution in the previous week among junior high school adolescents in Patrang District during the COVID-19 Pandemic (n=675)

Sports frequency	Frequency	Percentage (%)
Never	93	13,8
1 time	230	34,1
2-3 times	222	32,9
4-5 times	64	9,5
6 times or more	66	9,8

Description of activities carried out

At this point, it contains a statement about the activities that describe the respondent in the last week. The answer choices are divided into almost all the time spent doing activities that require little effort, sometimes (1-2 times per week) doing physical activity in free time, often (3-4 times per week) doing physical activity in free time, quite often (5-6 times per week) do physical activity in your free time, very often (7 or more times per week) do physical activity in your free time. The following is a description of the activities carried out.

Table 6. Distribution of frequency description of activities performed among junior high school adolescents in Patrang District during the COVID-19 Pandemic (n=675)

Sports frequency	Frequency	Percentage (%)
Activity with minimal effort	285	42,2
Sometimes physical activity	144	21,3
Frequent physical activity	175	25,9
Quite often physical activity	35	5,2
Very frequent physical activity	36	5,3
Activity with minimal effort	285	42,2

Frequency of physical activity

At this point, it contains questions about the frequency of physical activity per day during the past week. Answer choices were divided into never, rarely, sometimes, often, and very often. The following are the results of the frequency of physical activity per day for the past week.

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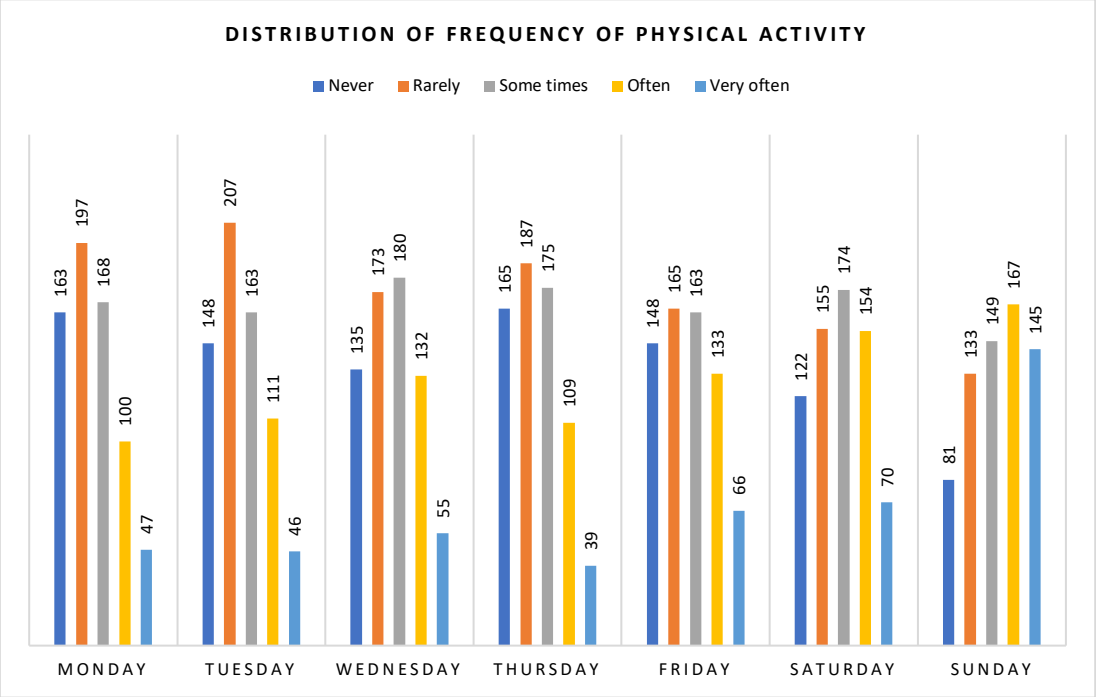

Figure 2. Frequency distribution of physical activity among among junior high school adolescents in Patrang District during the COVID-19 Pandemic (n=675)

Obstacles to physical activity

At this point, respondents were asked whether there was anything preventing the respondent from doing physical activity, for example illness. Respondents were given the choice of yes and no. If the respondent answers yes, then they must provide reasons for the obstacles that prevent the respondent from carrying out physical activity.

Table 7. Distribution of obstacles to doing physical activity among junior high school adolescents in Patrang District during the COVID-19 Pandemic (n=675)

Clasification	Frequency	Percentage (%)
Yes	282	41,8
No	393	58,2

The level of physical activity in this study was categorized into four, namely very low, low, moderate, high and very high. The level of physical activity was measured using the Physical Activity Questionnaire for Adolescents (PAQ-A) questionnaire. The results of the research based on each indicator are shown in the following table:

Table 8. Physical activity level indicator among junior high school adolescents in Patrang District during the COVID-19 Pandemic (n=675)

Physical activity level indicator	Md (P_{25}-P_{75})	Z	*P-value*
Exercise frequency	2,00 (2,00-2,00)	0,306	0,000
Participation in PJOK learning	4,00 (3,00-4,00)	0,211	0,000
Usually at lunch time	1,00 (1,00-2,00)	0,360	0,000
Sports frequency when coming home from school	3,00 (2,00-3,00)	0,206	0,000
Exercise frequency in the afternoon	2,00 (2,00-3,00)	0,183	0,000
Exercise frequency last week	3,00 (2,00-3,00)	0,203	0,000
Overview of physical activity	2,00 (1,00-3,00)	0,250	0,000
Frequency of physical activity	3,00 (2,00-3,00)	0,222	0,000
Total Physical Activity Level	3,00 (2,00-3,00)	0,353	0,000

Md=median, P25-P75=percentils ke (25-75), Z=nilai hitung One Sample Kolmogorov-Smirnov Test, P-value=nilai signifikansi One Sample Kolmogorov-Smirnov Test

According to the results of calculations using one-sample Kolmogorov-Smirnov, it was found that there was a significant difference (p-value ‹0.001) in the level of physical activity of junior high school teenagers in Patrang District, including all indicators, namely frequency of exercise, participation in PJOK lessons, habits at meal times. afternoon, frequency of exercise after school, frequency of exercise in the afternoon, frequency of exercise last week, description of physical activity, and frequency of physical activity.

The assessment results are obtained from the accumulated scores on the physical activity level questionnaire questions, which are then classified based on physical activity level groups. The following are the results of research on the physical activity levels of junior high school teenagers in Patrang District.

4. DISCUSSION

Characteristics of respondents

Table 1 shows that the frequency of female students is 392 students (58.1%) and the frequency of male students is 283 (41.9%). These results indicate that the number of female students is more than male students. This condition is in line with research conducted by Abeng (2020) in Palangka Raya which had 52 male respondents (46.43%) and 60 female respondents (53.57%). Daniati's research (2020) in Padang had a total of 50 male students and 102 female students, where the number of female students who became research respondents was more than the number of male students.

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Table 1 shows that the students who were respondents in this study were in the age range of 12-15 years, with the highest frequency being students at the age of 15. WHO defines youth as individuals who are in the age group of 10-19 years (WHO, 2018). According to Permenkes RI No 25 of 2014, adolescents are individuals who are in the age range of 10-18 years (Permenkes, 2014). In this study, the age range of the respondents was 12-15 years. This condition is in line with the research conducted by Putri and Sundari (2019), where the research was conducted with junior high school student respondents who were in the age range of 13-15.

The Level of Physical Activity of Adolescents

In table 5.2 there are the results of research conducted on respondents by filling out the physical activity questionnaire given. According to the table, the level of physical activity with the highest frequency is at a low level (61.5%). The second level of physical activity is at a moderate level (28.0%), the third is a very low level (7.3%), the fourth is a high level (3.3%), and the last is a very high level (0%). These results indicate that junior high school youth in Patrang District rarely carried out active physical activities during the COVID-19 pandemic. This is in line with research conducted by Leonardo et al. (2021) at SMPN 2 Raren Batuah, in this study it was found that the most physical activity carried out by teenagers was at a low level (49%), and the lowest was a high (5%) and very high (5%) level of physical activity. In a study conducted by Muharani (2021), the results showed that most of the physical activity levels of adolescents were in the moderate activity level category (52%), less than half had a low activity level (46%), and a small proportion had a moderate level of physical activity. high (2%). In the research conducted by Miranda and Sari (2022), the results of the percentage of physical activity of adolescents during the Covid-19 pandemic were at a moderate level of 56.4%, a high level of 22.7%, a low level of 10.9%.

Based on Erikson's theory, the early adolescent phase occurs in adolescents aged 10-13 years, and the middle adolescent phase is in the age range of 14-17 years. In this study the age range of the respondents was 12-15 years, with the highest frequency of respondents being at the age of 15 with a total of 244 students (36.1%), at this age the students were in grade 9. Students in grade 9 did a lot activities at school and outside of school, apart from participating in class activities, students are also busy preparing for exams to enter the next school level.

In this study it was found that the level of physical activity of the majority of students was still low. The results of the study are not much different from previous research which was conducted when students were still learning online. Even though learning has been carried out offline, students still have a low level of physical activity.

The nursing implication in this research is providing education to teenagers about the importance of doing regular physical activity, as well as the impacts that will occur if they do not do enough physical activity and live a sedentary life. Low levels of physical activity have a bad impact on the body, so efforts are needed to advise teenagers to do physical activity with moderate to high intensity more often, and reduce activities that require little movement, such as playing on cellphones all day. So that teenagers can maintain optimal body health.

The education that can be provided can also be in the form of knowledge about health maintenance to avoid infectious diseases, especially those of the respiratory tract. The Covid-19 pandemic can be a lesson to pay more attention to daily habits and improve lifestyle so that the body has more optimal resistance in dealing with infectious diseases.

5. CONCLUSION

The level of physical activity of junior high school teenagers in Patrang District has a significant difference (p value ‹0.001). The majority of teenagers have low levels of physical activity. The characteristics of the research respondents are teenagers who are junior high school students in Patrang District. There are more female teenagers than male students. The age range of adolescents in this study was 12-16 years old who were in grades 7, 8 and 9, where the highest number of respondents were grade 9 students. Gender has a relationship with the level of physical activity of junior high school adolescents in Patrang District, where the female sex has more low physical activity.

The school can develop programs or activities that can increase the physical activity of adolescents, so that adolescents can carry out optimal physical activity and minimize health problems that can occur due to lack of physical activity.

AUTHOR CONTRIBUTIONS

Substantial contributions to conceptualization, data curation, analysis, Supervision Writing - review & editing: Nuraini Melika Ferdianti, Hanny Rasni, and Fahruddin Kurdi. Manuscript revisions: Nuraini Melika Ferdianti

CONFLICT OF INTEREST

The authors declare no conflict of interest for this publication.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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